UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/693,231 | 10/23/2003 | Tomokazu Kake | 81659 [SC-70004US] | 1421 |

22242 7590 05/14/2008

FITCH EVEN TABIN AND FLANNERY
120 SOUTH LA SALLE STREET
SUITE 1600
CHICAGO, IL 60603-3406

| EXAMINER | |
|---|---|
| BROOME, SAID A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2628 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 05/14/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/693,231 | KAKE ET AL. | |
| | Examiner | Art Unit | |
| | SAID BROOME | 2628 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14,17,22 and 24-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-14,27,29,31,33,35 and 40* is/are allowed.

6)☒ Claim(s) *17,22,24-26,28,32,34,36-39 and 41* is/are rejected.

7)☒ Claim(s) *30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/14/08 has been entered.

### *Response to Amendment*

1. This office action is in response to an amendment filed on 2/14/2008.
2. Claims 1, 17, 40 and 41 has been amended by the applicant.
3. Claims 2-14, 22 and 24-39 are original.
4. Claims 15, 16, 18-21, 23 and 42 have been cancelled.

### *Allowable Subject Matter*

In regards to claim 30, Seki and Fels do not teach that the image conversion unit partially changes a rate of the new moving-picture frame to be outputted from said image data output unit in a manner such that, according to attribute values of image regions that constitute the two-dimensional images, the cut surface is varied in time with different speed for each of the image regions, as recited in claim 13, and also do not teach that the attribute value is a value that indicates the order of approximation relative to a desired image pattern, as recited in claims 29 and 30. Therefore claims 13, 29 and 30 are

objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-14, 27, 29, 31, 33, 35 and 40 are allowed. The following is an examiner's statement of reasons for allowance:

The prior art, Seki (JP 09-035040), does not teach the limitations of claims 1 and 40. In regards to claims 1 and 40 4, Seki teaches original moving pictures as two-dimensional images that vary along time axis, and when the moving pictures are expressed, in a virtual manner, as a box space formed by the two-dimensional images and the time axis, cutting the box space by a surface that contains a plurality of points each of which differs from the other in time value (¶0011 lines 5-9: "*…there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Fig. 3, that is, time-space image I(x, y; t). In step SP2, said time-space image I(x, y; t) is cut by a plane parallel to the time axis, and the image appearing on the cut plane is taken as cross-sectional image…*", Fig. 3) and varying the cut surface in time (¶0010 lines 4-5: "*…the cross-section of the time-space image taken by a plane parallel to the time axis.*"). However, none of the prior art teaches or suggests projecting a first image that appears on the cut surface onto a first plane perpendicular to the time axis, projecting a second image that appears on the varied cut surface onto a second plane perpendicular to the time axis, and outputting the first and second images appearing on the first and second planes as new moving pictures, therefore claims 1-3 and 40 are allowable.

The prior art, Seki (JP 09-035040), does not teach the limitations of claim 4. In regards to claim 4, Seki teaches original moving pictures as two-dimensional images that vary along time axis, and when the moving pictures are expressed, in a virtual manner, as a box space formed by the two-dimensional images and the time axis, cutting the box space by a surface that contains a plurality of points each of which differs from the other in time value (¶0011 lines 5-9: "*…there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Fig. 3, that is, time-space image I(x, y; t). In step SP2, said time-space image I(x, y; t) is cut by a plane parallel to the time axis, and the image appearing on the cut plane is taken as cross-sectional image…*", Fig. 3) and varying the cut surface in time (¶0010 lines 4-5: "*…the cross-section of the time-space image taken by a plane parallel to the time axis.*"). However, none of the prior art teaches or suggests projecting a first image that appears on the cut surface onto a first plane perpendicular to the time axis, projecting a second image that appears on the varied cut surface onto a second plane perpendicular to the time axis, and outputting the first and second images appearing on the first and second planes as new moving pictures, therefore claims 4-14, 27, 29, 31, 33 and 35 are allowable.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17, 22, 24-26, 28, 32, 34, 36 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki (JP 09-035040).

Regarding claim 17, Seki teaches an image generating method (¶0001 lines 2-3: "*…invention pertains to an image processing method…*"), including:

reading out, for a first in-picture position of a first image contained in a first target frame in original moving pictures, first data that correspond to the in-picture position (¶0012 lines 1-2 and 6-11: "*...a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object…This plane completely contains the information pertaining to the movement of the object…*", *where a certain region from all the frames is captured, Fig. 4*);

synthesizing the first data in a ratio according to an attribute value of the first image (¶0012 lines 1-2 and 8-11: "*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object…*", *where an attribute value, such as the proportional difference in the position of the object over time, is tracked and presented in a synthesized image that displays the movement of the object over a time interval, Fig. 5*);

reading out, for a second in-picture position of a second image contained in a second target frame in the original moving pictures, data that correspond to the second in-picture position (¶0011 lines 8-11: "*…the image appearing on the cut plane is taken as cross-sectional image C…plural cross-sectional images C(d, t; θ) can be obtained…* ", *in which several projected cross sectional images containing in-picture positions, Fig. 5, may be obtained and appear on the cut surface*);

synthesizing the second read-out data in a ratio according to an attribute value of the second image (¶0011 lines 8-11: "*…the image appearing on the cut plane is taken as cross-sectional image C…plural cross-sectional images ...can be obtained…* " and ¶0012 lines 1-2 and 8-11: "*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object…*", *where an attribute value, such as the proportional difference in the position of the object over time, is tracked and presented in a synthesized image that displays the movement of the object as imaged in second, or subsequent consecutively captured images over a time interval, Fig. 5*); and

though Seki does not specifically teach forming new moving images by sequentially outputting frames formed in the synthesizing, one skilled in the art would have understood that output of several synthesized images would enable a user to animate the movement of several objects in a sequence of images through generation of several synthesized images for each group that corresponds to an object in sequence of images

(¶0015 lines 1-5: "*When there are plural moving objects in the cross-sectional images, plural groups of the cross-sectional images are prepared corresponding to the respective objects, to get the trace cross-sectional image for each object.*", *whereby a special effect may then be visualized showing the movement of several objects present in the sequence of images*).

Regarding claims 22, 24 and 41, Seki teaches an image generating apparatus which includes an image memory, an image conversion unit and an image data output unit (¶0011 lines 1-3: "*…a camcorder is used to take the consecutive images that are input to an image processor…as shown in Figure 1, as the images…are represented…*", *in which an image pickup apparatus enables captured images, thereby stored on the apparatus, to enable image display conversion processing enabling the images to be output*), though Seki does not explicitly teach a recording medium, one skilled in the art would have understood that the device used to capture the images (¶0011 lines 1-2: "*…the consecutive images that are input to an image processor.*", *Fig. 4, stores a program to execute the image generation, Fig. 4, as recited in the preamble of claim 41*),

wherein said image memory (¶0011 lines 1-2: "*As shown in Fig. 1, for example, a camcorder is used to take the consecutive images that are input to an image processor.*", *in which the images are collected by an image pickup device and are thereby stored in an image memory, as disclosed in claims 22 and 24*), records, in sequence, original moving pictures for each frame, wherein said image conversion unit determines, for each in-picture position of an image contained in a target frame (¶0012 lines 1-2 and 8-11: "*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…this trace*

*cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object…*", *wherein for the successive frames, the position of an object in image is tracked, Fig. 4*), a plurality of frames at predetermined time intervals from the frames recorded in said image memory (¶0013 lines 1-2: "*…all of the consecutive images within a prescribed time are obtained beforehand.*", *where fames are captured over a predetermined time interval, therefore the time intervals between the frames is predetermined, Fig. 2*),

wherein said image conversion unit reads out, from the plurality of frames, data that correspond to the in-picture position and synthesizes the data in a ratio according to an attribute value (¶0012 lines 1-2 and 6-11: "*...a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object…This plane completely contains the information pertaining to the movement of the object…*", *where a certain region from all the frames is captured, as shown in Fig. 4, where an attribute value, such as the proportional difference in the position of the object over time, is tracked and presented in a synthesized image that displays the movement of the object over a time interval, Fig. 5*), and

wherein said image data output unit sequentially outputs the synthesized and reconstructed image data (Fig. 5).

Regarding claim 25, Seki teaches that the target frame or at least one of frames is at least one of a previous frame in time or a subsequent frame in time with respect to a

reference frame which should have been naturally outputted by said image data output unit from said image memory (¶0006 lines 6-7: "*…all of the consecutive images over a prescribed time are set side-by-side in time to form a three-dimensional time-space image…*", *where the frames are successively located along a time axis, therefore a particular frame that is presently analyzed would have a frame from the past in reference to a current frame*).

Regarding claim 26, Seki teaches that for each in-picture position of the images contained in the target frame, the image conversion unit or processor adds a predetermined pixel value in accordance with an attribute value thereof (¶0016 lines 3-7: "*…cutting of the initial time-space image is performed in all directions…the cutting plane is made of a helix plane along the movement trace of the object, and this plane completely contains the movement vector of the object, and it contains all of the information about the movement trace.*", *where a predetermined cut is performed on the surface containing a position, or pixel value, within the frames to track the movement of the object in accordance with an attribute value, such as the specified time interval of the frames*, ¶0011 lines 1-5: "*…a camcorder is used to take the consecutive images…as the images at an instant (11, 12, 13) shown in Fig. 2 are represented as I(x, y) with the orthogonal coordinates of X-axis and Y-axis, all of the images obtained are set side-by-side in time sequence.*").

Regarding claim 28, Seki teaches an attribute value is a depth value (¶0011 lines 5-7: "*…there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Fig. 3, that is, time-space image I(x, y; t).*", Fig. 3).

Regarding claim 32, Seki teaches an attribute value is a value that indicates a degree of change of an image area in time (¶0016 lines 3-7: "*…cutting of the initial time-space image is performed in all directions…the cutting plane is made of a helix plane along the movement trace of the object, and this plane completely contains the movement vector of the object, and it contains all of the information about the movement trace.*").

Regarding claim 34, Seki teaches the attribute value is a pixel value (¶0012 lines 1-2: "*…a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…only the portion containing angle $\theta_d$ is extracted from each cross-sectional image C(d, t; θ), and a new image is formed.*", *where the position of the pixel with the image frame is tracked over a time interval*).

Regarding claim 36, though Seki does not explicitly teach an image input unit, one skilled in the art would have understood that an image pickup device, such as a camera or camcorder (¶0011 lines 1-2: "*…a camcorder is used to take the consecutive images that are input to an image processor.*", *contains an image input unit which acquires, as the original moving pictures, image shot by a camera and sends the images to said image memory*).

Claims 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki in view of Fels et al.(hereinafter "Fels", "*Techniques for Interactive Video Cubism*").

Regarding claim 37, Seki fails to teach a setting input unit which acquires, via a user operation, input of a setting value used to determine the at least one of frames, wherein said image conversion unit determines the at least one of frames according to the

setting value acquired by said setting input unit. Though Fels does not explicitly teach a setting input unit and image conversion unit, one skilled in the art would have understood that the input capabilities provided to the user have a corresponding input unit, as well as an image conversion unit to process the images displayed (Figs. 1-4), which acquires, via user operation, input of a setting value used to determine the at least one of frames, wherein said image conversion unit determines the at least one of frames according to the setting value acquired by said setting input unit (sec. 1 1st ¶ lines 1-3: "*Using the mouse as a virtual trackball, the user is able to rotate or translate the entire scene, the video cube, or the cut plane.*", *in which a plane which corresponds with an associated frame, Fig. 1, may be selected by user input*), where the image conversion unit cuts the box space by the surface defined by a function of the setting value acquired by the setting input unit (sec. 3.3.1 lines 1-2: "*The cut plane allows the user to move a planar window inside the video cube and examine the corresponding imagery…*", *where the three-dimensional surface is cut by a plane, Fig. 3, in which the processed images are therefore displayed, Figs. 1-4, obtained using an image conversion unit*), therefore it would have been obvious to one of ordinary skill in the art to modify the captured frames generated by Seki with the interactive frame interaction provided by Fels because this modification would provide the ability to accurately display successive frames of animation or video collectively in a three-dimensional format in which the user may interactive with the data to define a plane by which to cut the surface of the data to define a representation of the change of the images or frames over a time interval thereby enabling temporal analysis of the data.

Regarding claim 38, Seki teaches a curve that indicates a relation between coordinates of points contained in the two-dimensional images and time values thereof and a variable of the function is displayed on a screen (¶0012 lines 1-11: "*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…the object trace on said cross-sectional image C(d, t; θ) at a certain time is determined…This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object…this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object.*", Fig. 5). However, Seki fails to teach a setting input unit and a setting value. Though Fels does not explicitly teach a setting input unit, one skilled in the art would have understood in view of the teachings of Fels that the input capabilities provided to the user have a corresponding input unit, therefore the provided input (sec. 1 1st ¶ lines 1-3: "*Using the mouse as a virtual trackball, the user is able to...translate...the video cube, or the cut plane.*" and sec. 3.3.1 lines 1-2: "*The cut plane allows the user to move a planar window inside the video cube and examine the corresponding imagery…*", *has a corresponding input unit to provide a value that is used to define the cut surface, Fig. 4*), therefore it would have been obvious to one of ordinary skill in the art to modify the captured frames generated by Seki with the interactive frame interaction provided by Fels because this modification would provide the ability to accurately display successive frames of animation or video collectively in a three-dimensional format in which the user may interactive with the data to define a plane by

which to cut the surface of the data to define a representation of the change of the images or frames over a time interval thereby enabling temporal analysis of the data.

Regarding claim 39, Seki teaches that based on coordinates of characteristic points in the two-dimensional images, the image conversion unit, or image processor, cuts the box space by a curve defined by a function of the coordinates of the characteristics points (¶0012 lines 1-11: "*This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object. That is, this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object* ", Fig. 5). However, Seki fails to teach a setting input unit and a setting value. Though Fels does not explicitly teach a setting input unit, one of ordinary skill in the art would have understood in view of the teachings of Fels that the input capabilities provided to the user have a corresponding input unit, therefore the input (sec. 1 1st ¶ lines 1-3: "*Using the mouse as a virtual trackball, the user is able to…translate…the video cube, or the cut plane.*" and sec. 3.3.1 lines 1-2: "*The cut plane allows the user to move a planar window inside the video cube and examine the corresponding imagery…*", *has a corresponding input unit to provide a value that is used to define a certain portion of the cut surface, Fig. 4*), therefore it would have been obvious to one of ordinary skill in the art to modify the captured frames generated by Seki with the interactive frame interaction provided by Fels because this modification would provide the ability to accurately display successive frames of animation or video collectively in a three-dimensional format in which the user may interactive with the data to define a plane by which to cut

the surface of the data to define a representation of the change of the images or frames over a time interval thereby enabling temporal analysis of the data.

***Response to Arguments***

Applicant's arguments filed 2/14/08 have been fully considered but they are not persuasive.

The 35 U.S.C. 101 rejection of claims 40 and 41 has been withdrawn due to the amendment to the claims which provides a computer-readable medium encoded with a computer program.

The applicant argues on pg. 11 2nd ¶ lines 5-8 – 3rd ¶ line 1 of the remarks that the amendments to claims 1, 17, 40 and 41 to overcome the 35 U.S.C. 112 second paragraph rejection provided in the previous Office Action, and are supported by the Specification. However, the claim language added in the amendment, as provided in claim 1: "projecting a first image that appears on the cut surface onto a first plane perpendicular to the time axis; varying the cut surface in time; projecting a second image that appears on the varied cut surface onto a second plane perpendicular to the time axis; and outputting the first and second images appearing on the first and second planes as new moving pictures.", is not supported by the Specification as suggested by the applicant's remarks in 3rd ¶ lines 6-15, therefore claims have been rejected under 35 U.S.C. 112 first paragraph for calming subject that was not described in the originally filed specification.

The applicant argues on pg. 12 2nd ¶ lines 4-5 of the remarks that Seki's plane (l) is not perpendicular to the time axis t. However, applicant's arguments are persuasive, and claims 1-3 and 40 were indicated as allowable.

The applicant argues on pg. 13 2nd ¶ line 1 - 3rd ¶ line 8 of the remarks that Seki describes that image (L) is intended to represent a locus of movement of an object and as such, cannot be perpendicular to the time axis t, and would be misconstruing the reference in a manner contradictory with its very purpose because projecting Seki's cross section image (C) into a plane perpendicular to the time axis would defeat the stated purpose of Seki: that is to extract an object movement trace, in which if the cross section image (C) were projected into a plane perpendicular to the time axis as the Office Action asserts, there would be no information about the speed and direction of the object and Seki's device would not work for its intended purpose. However, applicant's arguments are persuasive, and claims 1-3 and 40 were indicated as allowable.

The applicant argues on pg. 14 1st ¶ line 8 - 2nd ¶ line 9 of the remarks that Seki does not teach or suggest how single images are made into moving images. However, Seki teaches that for each of a plurality of moving objects, a trace cross-sectional image is generated, therefore a plurality of moving pictures are created for the plurality of objects rendered in the scene.

The applicant argues on pg. 15 1st ¶ lines 6-7 of the remarks that Seki does not teach a surface that contains a plurality of points each of which differs from the other in time value. However, Seki illustrates in Fig. 4 that data is captured from images (11, 12, 13), which are clearly shown in Fig. 4 to be oriented along a time axis, in which the cut surface thereby contains points 21 form each respective instance in time.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAID BROOME whose telephone number is (571)272-2931. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ulka Chauhan/
Supervisory Patent Examiner, Art Unit 2628

/Said Broome/
Examiner, Art Unit 2628